

REMARKS/ARGUMENTS

The specification has been amended to correct a minor grammatical error (i.e., removing an improper conjunction, "that", from a sentence). This amendment does not add any new matter.

Claims 1-41 are pending. No claims have been cancelled. No claims have been added. Please amend claims 14, 21, 30, and 36 without prejudice to more particularly point out the subject matter of the invention. The claim amendments are directed to original subject matter that the Office has had the opportunity to examine in the first Office Action. Therefore, the presented claim amendments do not necessitate new grounds of rejection.

In view of the following remarks, reconsideration and withdrawal of the outstanding 35 USC §103(a) rejections to the pending claims, and allowance of the pending claims, is respectfully requested.

Claim Rejections Under 35 USC §103(a)

Claims 1-41 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 6,223,145 B1 to Hearst in view of US Patent No. 6,258,366 B1 to Ng et al (hereinafter referred to as "Ng"). These rejections are traversed.

"To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The

teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." (See, the MPEP, §2143).

Claim 1 recites "specifying an object having first and second intersecting hierarchies", "illustrating the object with respect to the first hierarchy", and "presenting a second intersecting hierarchy selection option to illustrate the object with respect to the second intersecting hierarchy in response to user selection." Nowhere do the cited references singly or in combination teach or suggest these features.

Page 6, lines 1-17 of the specification recite:

"[i]n a hierarchy, data that is arranged in a graded series with respect to other data. A data polyarchy is two or more intersecting hierarchies of data. In other words, in a data polyarchy one or more data nodes in a first hierarchy are shared in various dimensions with one or more other hierarchies of data.

To illustrate a polyarchy, or multiple intersecting hierarchies of information, consider the following example. In a company, a person has both implicit and explicit relationships not only to other people, but also to company resources, geographical locations, business units, club memberships, hobbies, and the like. Each of these relationships respectively represents a hierarchy of data, or information. Thus, one hierarchy might show an individual within an organizational chart of people and another hierarchy might depict the individual's physical location on the company campus. A polyarchy is formed from the multiple hierarchies because each hierarchy shares a common node along various dimensions that corresponds to the person."

In addressing claim 1, the July 07, 2003 Office Action ("ACTION") at page 1, section 2, equates the claimed "object having first and second intersecting hierarchies" to the "first group object and second group object" of Hearst.

However, it is respectfully submitted that the "first group object and second group object" of Hearst does not teach or suggest "an object having first and second intersecting hierarchies", as recited in claim 1.

In particular, Hearst at col. 7, lines 6-29, teaches that a user interacts with a cone tree—a 3-D node-link structure that presents a single hierarchy of category taxonomies associated with respective ones of the documents—to generate a search query. Such a cone tree, as shown by Hearst in Fig. 13, represents data in a single hierarchy. For instance, the cone tree of Hearst includes a set of nodes or elements that are connected to each other. Each node, except the root node, has exactly one parent. The root node has no parent. Each node has any number of children, from none to many. A node with no children is called a leaf node. Thus, the cone tree is a single data hierarchy, merely used to represent a single dimension of data relationships.

Hearst at col. 7, lines 6-29, teaches that a user builds the search query, first, by selecting first a category from the hierarchy. The user then selects a large corpus of documents to which the to-be-generated query is to be applied. Nowhere does Hearst teach or suggest that the corpus of documents is arranged in any type of graded series with respect to any other data. Hearst, at col. 10, lines 16-67, teaches that the user must next utilize a query construction dialog box (i.e., see query construction object 216 of Fig. 13) to input text terms (via a keyboard) into several text box user interface (UI) controls, which Hearst calls "group objects 220".

"[G]roup objects 220" of Hearst are not "an object having first and second intersecting hierarchies", as recited in claim 1. Rather, Hearst teaches that each "group object 220" is a text box user interface (UI) control. The UI controls are

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used to collect user input text terms and/or categories selected by the user from the cone tree. Although information in one "group object 220" may be combined with the collected information from another group object via a Boolean expression such as "AND" or "NOT" Boolean expressions (col. 11, lines 8-23), nowhere does Hearst teach or suggest that such user input (combined or uncombined) is arranged in any graded series with respect to any other data, including the categories in the cone tree and the corpus of documents. For these reasons, and contrary to what is asserted in the ACTION, the "first group object and second group object" of Hearst does not teach or suggest "an object having first and second intersecting hierarchies", as recited in claim 1.

In view of the above, the only hierarchy that Hearst teaches or suggests is the category hierarchy of the cone tree, which is a single hierarchy that does not represent more than a single data relationship with respect to its constituents—not an "intersecting hierarchy" that represents multiple intersecting dimensions of data relationships. Single non-intersecting hierarchies are described in detail in the Background section of Applicant's Specification. Single non-intersecting hierarchies are limited existing data representation techniques, over which the subject matter of the patent application seeks to improve. Additionally, Hearst does not teach or suggest that a user-selected corpus of documents is arranged in any graded series with respect to any other data. Thus, the cone tree and the corpus of documents do not represent "first and second intersecting hierarchies", as claim 1 recites. Additionally, Hearst does not teach or suggest that text terms input by the user and collected in a "group object 220" are arranged in any graded series (i.e., hierarchical).

Moreover, combining content of "group objects 220" via a Boolean expression does not teach or suggest any type of graded series arrangement that intersects with a different graded series arrangement ("first and second intersecting hierarchies", as claim 1 recites). As a result, Hearst does not teach or suggest that collected contents of the group objects 220, alone or in combination with contents of any other group, represent any type of "intersecting hierarchies", as claim 1 recites. At most, Hearst teaches that a search query is generated "using information from each group of objects 220" (to include "at least one member of the first group and at least [one] member of the second group"), and applied to the corpus of documents (see, Hearst at col. 11, lines 53-65 and the Abstract).

The ACTION does not rely on the secondary reference of Ng to teach or suggest "intersecting hierarchies", as recited in claim 1. Moreover, it is respectfully submitted that upon review, Ng does not teach or suggest this claimed feature. Rather, Ng teaches a system for navigating a single hierarchy of objects by exploding and imploding selected nodes of the hierarchy. As in Hearst, the hierarchy of Ng is a conventional hierarchy that includes a set of nodes or elements that are connected to each other in a single dimension. Techniques for representing data in a single dimension data hierarchy are described in the Background section of Applicant's Specification. Thus, Ng teaches a conventional technique for representing data over which the claimed features of the subject patent application seeks to improve. Nowhere does Ng teach or suggest such "intersecting hierarchies" as claim 1 recites.

Accordingly, Hearst singly or in combination with Ng does not teach or suggest all the features of claim 1. As a result, a prima facie case of obviousness

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has not been shown, and the 35 USC §103(a) rejection of claim 1 should be withdrawn.

Claim 1 includes additional features that are not taught or suggested by the cited combination of references. For instance, claim 1 recites in part "presenting a second intersecting hierarchy selection option to illustrate the object with respect to the second intersecting hierarchy in response to user selection." The references of record do not teach or suggest this claimed feature.

In addressing claim 1, the ACTION concedes that Hearst does not teach or suggest "presenting a second intersecting hierarchy selection option to illustrate the object with respect to the second intersecting hierarchy in response to user selection." Instead, the ACTION relies on the teachings of Ng, col. 8, lines 20-59, for this missing feature, asserting that Ng "teaches presenting a second hierarchy selection option to illustrate the object with respect to the second intersecting hierarchy in response to user selection. Then, the ACTION concludes that it would have been obvious to one of ordinary skill in the art to present a second intersecting hierarchy in response to user selection as taught by Ng to the interactive interface of Hearst for specifying searches of Hearst, in order to display management of and selective presentation of tree levels and tree branches in the hierarchy tree of an information system. This conclusion is unsupportable.

The ABSTRACT of Ng teaches a system for navigating a single hierarchy of objects by exploding and imploding selected nodes of the hierarchy. The portion of Ng on which the ACTION relies, col. 8, lines 20-59, teaches that a root node of the tree is drawn, and after a tree node explosion or implosion operation is performed, the visible nodes of the tree are redrawn using selected colors to indicate node state. Such node explosion, implosion, and node painting operations

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do not teach or suggest "presenting a second intersecting hierarchy selection option to illustrate the object with respect to the second intersecting hierarchy in response to user selection". Rather, Ng teaches that visible nodes of the tree are redrawn with respect to a single data hierarchy (i.e., a single dimension of data), which is completely silent with respect to any other intersecting hierarchy (a data polyarchy or intersecting hierarchy). For these additional reasons, nowhere does Ng teach or suggest "presenting a second intersecting hierarchy selection option to illustrate the object with respect to the second intersecting hierarchy in response to user selection", as Applicant claims.

For this additional reason, the 35 USC §103(a) rejection of claim 1 over Hearst in view of Ng is improper and should be withdrawn.

Claims 2-13 depend from claim 1 and by virtue of this dependency are patently distinguished over the cited references. Moreover, claims 2-13 include additional features that are not taught or suggested by the cited references.

For instance, claim 4 recites:

*"wherein the first and second intersecting hierarchies
comprise a plurality of additional objects;*

wherein the method further comprises:

*presenting context sensitive information for the object
and an additional object, the context sensitive information for the
additional object comprising an indication of a third hierarchy; and*

*choosing the indication corresponding to the third
hierarchy; and*

in response to choosing:

*(a) if the first hierarchy intersects the third
hierarchy, illustrating both the object and the additional object with
respect to the third hierarchy; and*

*(b) if the first hierarchy does not intersect the third hierarchy,
illustrating only the additional object with respect to the third
hierarchy."*

In support of the rejection of claim 4, the ACTION points generally to the teachings in col. 4, lines 11-67, and col. 5, lines 15-53 of Ng. It is respectfully submitted that these cited portions of Ng are completely silent with respect to the recited features of claim 4. Ng, col. 4, lines 11-67, does not teach or suggest any type of hierarchy other than a single hierarchy of nodes, respective ones of which may be "exploded" or "unexploded" and painted corresponding colors. E.g., "[t]he root node is painted an 'exploded' color different from the 'unexploded' color of four subtree nodes at the next level." Additionally, Ng goes on to teach that "[i]n the event a branch of the hierarchy has been opened and is not wanted, the branch may be imploded by mouse clicking on a node in the branch." These single hierarchy node expansion and contraction operations combined with a color painting scheme do not remotely teach or suggest the recited features of claim 4.

For these additional reasons, the 35 USC §103(a) rejection of claim 4 is improper and should be withdrawn.

If claim 4 is again rejected in a subsequent Office Action in view of these two cited references, it is respectfully requested for the Office specifically point out where these features are taught or suggested in the cited references. For instance, please point out where Hearst in view of Ng teach or suggest "[...] presenting context sensitive information for the object and an additional object, the context sensitive information for the additional object comprising an indication of a third hierarchy", "choosing the indication corresponding to the third hierarchy", "in response to choosing: (a) if the first hierarchy intersects the third hierarchy, illustrating both the object and the additional object with respect to the third hierarchy", and "(b) if the first hierarchy does not intersect the third hierarchy, illustrating only the additional object with respect to the third hierarchy".

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Claim 5 recites "in response to the choosing, filtering the additional objects based on the chosen attribute." In addressing these features the ACTION points to Ng, col. 3, lines 40-63, and Fig. 1A. It is respectfully submitted that these portions of Ng have been reviewed and nowhere do they teach or suggest these recited features of claim 5. Instead, these referenced portions of Ng teach the relationship between objects in a single hierarchy having various levels of nodes and leaves. This has nothing to do with the features of claim 5, which "in response to the choosing, filtering the additional objects based on the chosen attribute." For this additional reason, the 35 USC §103(a) rejection of claim 5 is improper and should be withdrawn.

If claim 5 is again rejected in a subsequent Office Action in view of the same references, it is respectfully requested for the Office specifically point out where these claimed features are taught or suggested in the references.

Claim 6 recites "selecting the second intersecting hierarchy selection option", and "in response to the selecting, illustrating the object with respect to the second intersecting hierarchy." In addressing these features, the ACTION points to Ng, col. 6, lines 19-60. However, this portion of Ng teaches node expansion not "selecting the second intersecting hierarchy selection option", and "in response to the selecting, illustrating the object with respect to the second intersecting hierarchy, as claim 6 recites. Nowhere does Hearst in view of Ng even remotely suggest such a "second intersecting hierarchy selection option".

For this additional reason, the 35 USC §103(a) rejection of claim 6 is improper and should be withdrawn.

Claim 7 recites "visually morphing from the first intersecting hierarchy to the second intersecting hierarchy." . The specification at page 3, lines 12-14,

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explicitly describes that "[w]hen morphing, the first structure representing the first hierarchy is gradually changed to a second structure that represents the second hierarchy."

In addressing this feature, the ACTION points to Hearst, col. 10, lines 35-67. However, it is respectfully submitted that nowhere does this cited portion of Hearst teach or suggest the "morphing" feature of claim 6. Instead, the cited portion of Hearst teaches displaying a cone tree, a dialog box (a query construction object), and user keyboard input into the dialog box. Cone tree and dialog box display, and user keyboard input does not teach or suggest "visually morphing from the first intersecting hierarchy to the second intersecting hierarchy", as claim 7 recites.

For this additional reason, the 35 USC §103(a) rejection of claim 7 is improper and should be withdrawn.

Claim 8 recites "visually morphing from the first intersecting hierarchy to the second intersecting hierarchy, one or more additional objects being illustrated with respect to the first intersecting hierarchy", and "the visually morphing comprising: simultaneously illustrating at least a portion of both the first and second intersecting hierarchies and graphically pivoting about the object to temporarily show a relationship of the objects with respect to the first and second intersecting hierarchies." In addressing claim 8, the ACTION points to Hearst, col. 12, lines 21-54. However, this portion of Hearst merely teaches that a cone tree is rotated to help users retain the context of categories (nodes), the cone tree is displayed separate from display of documents, documents can be presented as a group, and that users can click on respective tree nodes. This does not teach or suggest the feature of claim 8, which include "morphing", "pivoting about the

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object [which belong to first and second "intersecting hierarchies"], and "show[ing] a relationship of the objects with respect to the first and second intersecting hierarchies".

For this additional reason, the 35 USC §103(a) rejection of claim 8 is improper and should be withdrawn.

Claim 9 recites "the visually morphing comprising: overlaying at least a portion of both the first and second intersecting hierarchies simultaneously to temporarily illustrate a relationship of the objects with respect to the first and second intersecting hierarchies." In addressing these features, the ACTION points to Hearst, col. 14, lines 6-67. However, this referenced portion of Hearst simply teaches the benefits of tree "pruning", "highlighting" of categories with heavy dark box lines, identification of "disjuncts" used to construct a search query, and that "mouse events" cause a processor to "respond in some way" or "not respond". These disparate teachings do not teach or suggest the claimed "overlaying at least a portion of both the first and second intersecting hierarchies simultaneously to temporarily illustrate a relationship of the objects with respect to the first and second intersecting hierarchies."

For this additional reason, the 35 USC §103(a) rejection of claim 9 is improper and should be withdrawn.

Claim 14 recites "presenting an object within a first hierarchy of information", "switching from the first hierarchy of information to a second hierarchy of information to present the object within the second hierarchy of information", and "wherein the first and second hierarchies intersect at the object, the first hierarchy associated a first data relationship of the object, the second hierarchy associated with a second data relationship of the object, the first data

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relationship being different than the second data relationship." The cited references do not teach or suggest these claimed features for the following reasons.

In addressing this claim, the ACTION points to Hearst, col. 14, lines 6-67. However, this referenced portion of Hearst simply teaches "[a] method for navigating through a hierarchy of objects", which includes "marking as visible all children of the target object to a depth level" or "inhibiting visibility of all children of the target object in the hierarchy", and "drawing a new hierarchy display" to explode or implode the hierarchy as a function of whether the children of the target object are marked as visible. Hearst does not teach or suggest that the "new hierarchy" is an "intersecting hierarchy", but rather teaches that portions of a single hierarchy are selectively displayed or hidden. Thus, Hearst in view of Ng does not teach or suggest "wherein the first and second hierarchies intersect at the object, the first hierarchy associated a first data relationship of the object, the second hierarchy associated with a second data relationship of the object, the first data relationship being different than the second data relationship".

For this additional reason, the 35 USC §103(a) rejection of claim 14 is improper and should be withdrawn.

Claims 15-20 depend from claim 15 and by virtue of this dependency are patentably distinguished over the references of record. Additionally, claims 15-20 include other features that are not taught or suggested by the references of record for the reasons already discussed. Accordingly, for each of these reasons, the 35 USC §103(a) rejection of claims 15-20 is improper and should be withdrawn.

Claim 21 recites "presenting an object with respect to a first hierarchy of information", "switching from the first hierarchy of information to a second

hierarchy of information using a visual pivot technique in which the second hierarchy of information is visually pivoted about a pivot axis intersecting the object and the object is presented with respect to the second hierarchy of information", and "wherein the first and second hierarchies intersect at the object, the first hierarchy associated a first data relationship of the object, the second hierarchy associated with a second data relationship of the object, the first data relationship being different than the second data relationship". For the reasons already discussed, the 35 USC §103(a) rejection these recited features of claim 21 is improper and should be withdrawn.

Claims 22 recites "presenting a first object and a second object with respect to a first hierarchy of a polyarchy", "selecting a second hierarchy of the polyarchy", and "in response to the selecting, presenting the first and second objects with respect to the second hierarchy. For the reasons already discussed with respect to "a polyarchy", the cited references do not teach or suggest these recited features. As a result, the 35 USC §103(a) rejection claim 22 is improper and should be withdrawn.

Claim 23 depends from claim 15 and is allowable over the references of record by virtue of this dependency. Accordingly, the 35 USC §103(a) rejection of claim 23 is improper and should be withdrawn.

Claim 24 recites "a first area to facilitate user specification of an object that may be represented in first and second hierarchies", "a second area to illustrate the object with respect to the first hierarchy", and "a third area to facilitate user selection of the second hierarchy so that, upon selection of the second hierarchy, the second area is changed to illustrate the object with respect to the second hierarchy." For the reasons already discussed, the cited references do not teach or

suggest these recited features. Accordingly, the 35 USC §103(a) rejection claim 24 is improper and should be withdrawn.

Claims 25-29 depend from claim 24 and are respectively allowable over the references of record by virtue of this dependency. Additionally, for the reasons already discussed, claims 25-29 include additional features that are not taught of suggested by the cited references. As such, the 35 USC §103(a) rejection of claims 25-29 is improper and should be withdrawn.

Claim 30 recites "presenting an object within a first hierarchy of information", "switching from the first hierarchy of information to a second hierarchy of information to present the object within the second hierarchy of information", and "wherein the first and second hierarchies of information intersect at the object, the first hierarchy being associated a first data relationship of the object, the second hierarchy being associated with a second data relationship of the object, the first data relationship being different than the second data relationship." For the reasons already discussed above, the cited references do not teach or suggest these recited features. Accordingly, the 35 USC §103(a) rejection claim 30 is improper and should be withdrawn.

Claims 31-35 depend from claim 30 and are respectively allowable over the references of record by virtue of this dependency. Additionally, for the reasons already discussed, claims 31-35 include additional features that are not taught of suggested by the cited references. Accordingly, the 35 USC §103(a) rejection of claims 31-35 is improper and should be withdrawn.

Claim 36 recites "in response to specifying, receiving data from the data store, the data comprising first and second hierarchies of information that correspond to the specified object, the first and second hierarchies of information

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intersecting at the object, the first hierarchy being associated a first data relationship of the object, the second hierarchy being associated with a second data relationship of the object, the first data relationship being different than the second data relationship", "illustrating the object within the first hierarchy", and "presenting an indication of the second hierarchy for user selection to illustrate the object with respect to the second hierarchy." For the reasons already discussed above, the cited references do not teach or suggest these recited features of claim 36. Accordingly, the 35 USC §103(a) rejection claim 36 is improper and should be withdrawn.

Claims 37-41 depend from claim 36 and are respectively allowable over the references of record by virtue of this dependency. Additionally, for the reasons already discussed, claims 37-41 include additional features that are not taught or suggested by the cited references. Accordingly, the 35 USC §103(a) rejection of claims 37-41 is improper and should be withdrawn.



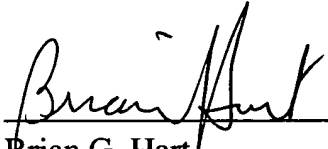
Conclusion

Claims 1-41 are in condition for allowance and action to that end is respectfully requested. Should any issue remain that prevents allowance of the application, the Office is encouraged to contact the undersigned prior or issuance of a subsequent Office Action.

Respectfully Submitted,

Dated: 10/17/03

By: _____


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